
LABORATORY
OF THE
INLAND REVENUE DEPARTMENT
OTTAWA, CANADA

BULLETIN No. 262

LIME FRUIT JUICE

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OTTAWA, July 12, 1913.

WM. HIMSWORTH, Esq.,
Acting Deputy Minister,
Inland Revenue.

SIR,—In Bulletins No. 83 (Dec., 1902) and No. 197 (Jan., 1910) were reported studies of Lime Fruit Juice, having for their object the exact definition of the article, under Sec. 26 of the Adulteration Act. This definition became law in February, 1911, by Order-in-Council of that date; and is published as Circular G. 947 by this Department. The Order-in-Council referred to, deals with the general subject of Beverages. So far as Lime Fruit Juice is concerned it contains the following:

5. LIME JUICE, LIME FRUIT JUICE, is the fresh fruit juice obtained from lime fruit (*Citrus limetta*); has a specific gravity at 20°C. not less than 1.030, and not greater than 1.040, and contains not less than ten (10) per cent of solids and not less than seven (7) per cent of free citric acid. Its optical activity (rotatory power to polarized light) lies between the limits $+ 0.5$ and $- 0.5$ of the Soleil-Ventzke scale, when observed in a tube of 200 mm. length, at 20°C.

Only five samples of the thirty herein reported fully meet the requirements of the legal Standard above. The others several approximate more or less closely to it, but at least thirty per cent of the collection gives unmistakable evidence of being reduced by addition of water; or made from a second pressing of the fruit (*Nachpresse*), which amounts to the same thing. While nothing harmful to health is introduced, it is clearly unfair to the consumer, and to the honest manufacturer, that a diluted fruit-juice should be tolerated on the market, while offered as genuine. If properly labelled, so as to declare the presence of water, no harm would be done, and Sec. 24 of the Act covers such case.

I beg to recommend the publication of this report, rather as a means of drawing public attention to the matter, than as a basis for prosecution. It deals with a very limited inspection, and is the first inspection of Lime Fruit Juice since the legal defining of the article.

An extensive collection of samples will be made in the near future with a view to enforcing the requirements of the Act.

I beg to recommend the publication of this report as Bulletin No. 262.

I have the honour to be, Sir,

Your obedient servant,

A. MCGILL,
Chief Analyst.

BULLETIN No. 262—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.	
				Quantity.	Cents.	Manufacturer.	Furnisher.

DISTRICT OF MONTREAL—

1912.							
Dec. 20	Lime Juice.....	51051	Laporte, Martin Cie, Ltd., St. Paul St., Montreal.	3 bots.	70	Dalton Bros., Toronto.	
" 20	"	51052	" " "	3 " "	94		
" 20	"	51053	" " "	3 " "	40	T. A. Lytle Co., Ltd.	
" 20	"	51054	H. E. Archambault, 78 Notre Dame east, Mon- treal.	3 " "	75		
" 20	"	51055	J. H. Goyer, 179 St. Law- rence B., Montreal.	3 " "	75	N. D. & C. Co., Co., Ltd.	
" 21	"	51056	M. Albert, St. Lawrence B., Montreal.	3 " "	75	Rose Co., Ltd., London.	
" 23	"	51057	Lyman, Ltd., St. Paul St., Montreal.	3 " "	45	Vendors.....	
" 26	"	51058	Nat. Drug & Chem. Co., Ltd., St. Gabriel St., Montreal.	3 " "	56	"	
" 26	"	51059	" " "	3 " "	69	"	
" 26	"	51060	L. McEwen Co., Ltd., St. Urbain St., Montreal.	3 " "	63	Bottled by ven- dors.	
" 26	"	51061	E. P. Dame, Blewry St., Montreal.	3 " "	75		
1913.							
Feb. 4	"	51062	I. Gougeon, Dorchester St. west, Montreal.	3 " "	60	Sutcliffe, Bing- ham, Ltd., Manchester.	

DISTRICT OF TORONTO—

1912.							
Dec. 19	Lime Fruit Juice	51551	The T. A. Lytle Co., Ltd., Sterling Road, Toronto.	3 bots.	24	Vendors.....	
" 20	"	51552	Fred Coward, 402 Spadina Ave., Toronto.	3 " "	60		Cordellio Fruit Co., Toronto.
" 20	"	51553	R. Lawson, 350 Spadina Ave., Toronto.	3 " "	75		Unknown.....
" 23	"	51554	The Nat. Drug & Chem. Co., Ltd., 27-29 Wellin- gton St., Toronto.	3 " "	75	Vendors.....	
" 23	"	51555	Dalton Bros., 11 Front St. east, Toronto.	3 " "	30	"	
" 23	"	51556	E. G. West & Co., 11 George St., Toronto.	3 " "	56	"	

LIME FRUIT JUICE.

Inspector's Report. (Is not an expression of Opinion).	Results of Analysis.						No. of Sample.	Remarks and Opinion of the Chief Analyst.
	Sp. gr. of Juice.	Total Solids.	Acidity eq. KOH N.	Acidity as Citric Acid.	Rotation (2 dm.)	Preservatives.		

J. J. COSTIGAN, INSPECTOR.

		p. c.	p. c.	p. c.				
.....	1.033	7.9	92	6.5	- 0.5	Benzoic acid...	51051	Below standard in solids and in citric acid.
"Montserrat".....	1.035	10.0	117	8.19	- 0.2	.....	51052	Genuine.
"Sterling".....	1.025	6.0	74	5.2	.....	.....	51053	Below standard in solids and in citric acid and density. Adulterated under the act.
"Olympia".....	1.034	8.7	102	7.2	- 0.4	Benzoic acid...	51054	Below standard in solids.
"Sovereign".....	1.030	6.9	96	6.72	- 0.2	" ..	51055	Below standard in solids. Adulterated under the act.
"Rose".....	1.035	8.4	111	7.77	+ 0.3	" ..	51056	Below standard in solids.
"Dominica"....	1.034	10.0	114	7.98	- 0.3	" ..	51057	Genuine.
"Olympia".....	1.024	7.8	102	7.20	.....	" ..	51058	Below standard in solids.
"Sovereign"....	1.031	7.2	95	6.65	- 0.2	" ..	51059	Below standard in solids. Adulterated under the act.
.....	1.017	3.6	54	3.78	.....	Salicylic acid...	51060	Diluted with water. Adulterated under the act.
"Sterling" Lime Fruit Juice.	1.030	6.4	82	5.81	+ 0.3	" ..	51061	Below standard in solids and in citric acid. Adulterated under the act.
"Kkovah" Brand.	1.025	6.1	79	5.53	- 0.4	" ..	51062	Below standard in solids and in citric acid. Adulterated under the act.

H. J. DAGER, INSPECTOR.

"Sterling".....	1.027	6.6	82	5.74	.....	.....	51551	Below standard in solids and in citric acid. Adulterated under the act.
"Standard".....	1.026	7.1	50	3.50	.....	Salicylic acid...	51552	Below standard in solids and in citric acid; dyed. Adulterated under the act.
"Olympia" Lime Juice.	1.032	8.5	100	7.00	.....	Benzoic acid....	51553	Below standard in solids.
"Sovereign" Lime Juice.	1.030	10.0	98	6.86	- 0.2	" ..	51554	Genuine.
"D. B. East India" Lime Juice.	1.027	6.2	81	5.67	.....	" ..	51555	Below standard in solids and in citric acid. Adulterated under the act.
Royal Crest. Non- alcoholic. Ven- dors were not aware of a stand- ard for Lime Juice until re-	1.020	5.1	65	4.55	.....	Salicylic acid....	51556	" ..

BULLETIN No. 262—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and address of Manufacturer or Furnisher as given by the Vendor.	
				Quantity.	Cents.	Manufacturer.	Furnisher.
DISTRICT OF TORONTO—							
1912.							
Dec. 23	Lime Fruit Juice	51557	T. E. Robinson, 1028 Queen St. west, Toronto.	3 bots.	75	.....	Unknown
" 24	"	51558	The J. F. Taylor Pharmaceutical Co., Ltd., 355½ Yonge St., Toronto.	3 " ..	75	Vendors.....	.....
1913.							
Jan. 7	"	51559	The Lyman Bros. Co., Ltd., 71 Front St. east, Toronto.	3 " ..	90	.....	Nat. Drug and Chem. Co., Ltd., Toronto.
" 8	"	51560	The T. Eaton Drug Co., Ltd., 190 Yonge St., Toronto.	3 " ..	50	Vendors.....	.....
" 9	"	51561	Drug Trading Co., Ltd., 6-8 Ontario St., Toronto.	3 " ..	52	.....	Maclure & Langley, Ltd., Toronto.
" 10	"	51562	F. H. Page, 186 Carleton St., Toronto.	3 " ..	75	.....	Drug Trading Co., Ltd., Toronto.
" 10	"	51563	Estate of J. R. Lee, Queen and Seaton Sts., Toronto.	3 " ..	75	.....	Unknown.....
" 10	"	51564	Breen Drug Co., 216 Queen St. east, Toronto.	3 " ..	75	.....	Lyman Bros. Co., Ltd., Toronto.
" 10	"	51565	M. E. Bush, 394 College St., Toronto.	3 " ..	75	.....	Holbrook, Ltd., Toronto.
" 10	"	51566	J. F. Cleary, 409 College St., Toronto.	3 " ..	75	.....	Unknown.....
" 10	"	51567	W. Parkhill, 674 Queen St. west, Toronto.	3 " ..	75	.....	Dalton Bros., Toronto.
" 11	"	51568	W. Greaves, 593 College St., Toronto.	3 " ..	75	.....	Nat. Drug. and Chem. Co., Ltd., Toronto.
Apr. 17	Orange Juice....	57165	St. Kitts Bottling Works, John Gallagher, Prop., 35 Centre St., St. Catharines.	3 " ..	25	Vendors.....	.....

LIME FRUIT JUICE—*Concluded.*

Inspector's Report. (Is not an expression of Opinion).	Results of Analysis.					No. of Sample.	Remarks and Opinion of the Chief Analyst.
	Sp. gr. of Juice.	Total Solids.	Acidity as KOH x	Acidity as Citric Acid.	Rotation (2 dm.)	Preservatives.	

H. J. DAGER, INSPECTOR.—*Concluded.*

		p. c.	p. c.	p. c.			
cently. They are withdrawing the present product from the market, and putting on an entirely new one to conform to standard.							
"Rose's" Prepared West India Lime Juice.	1·035	9·0	110	7·70 + 0·3	Benzoic acid....	51557	Nearly up to standard.
"Crystal" Pure Clarified West India Lime Juice.	1·026	6·6	75	5·25 + 0·1	Salicylic acid....	51558	Below standard in solids and in citric acid. Adulterated under the act.
"Montserrat" guaranteed pure. Evans Sons, Lescuyer & Webb, Liverpool.	1·036	10·1	118	8·26 - 0·2	.....	51559	Genuine.
"Eaton's." Pure.	1·031	8·7	98	6·86 + 0·5	Salicylic acid....	51560	Slightly below standard.
"Kovak" Lime Juice, Sutcliffe & Bingham, Ltd., Manchester.	1·023	6·6	88	6·16	.....	51561	Below standard in solids and in citric acid. Adulterated under the act.
Stower's Pure Lime Juice, Genuine. Contains no alcohol. Alex. Riddle & Co., Ltd., London.	1·030	8·0	93	6·51 + 0·5	.....	51562	" "
Pure Lime Juice..	1·031	8·7	100	7·00	Benzoic acid....	51563	Nearly meets standard.
Pure Jamaica Lime Juice.	1·035	9·8	113	7·91 + 0·1	.....	51564	Genuine.
Ross's Prepared West India Lime Juice. L. Ross & Co., Ltd., London, Leith and West Indies.	1·035	9·0	110	7·70 + 0·3	Benzoic acid....	51565	Nearly meets standard.
Rowat & Co., mfrs., Glasgow.	1·024	6·1	77	5·39	.....	51566	Below standard in solids and in citric acid. Adulterated under the act.
Dalton's West India Lime Juice Imported and bottled by Dalton Bros., Toronto.	1·070	17·2	74	5·18 - 11·3	Benzoic acid....	51567	Contains sugar. Below standard in citric acid. Adulterated under the act.
Olympia Lime Juice.	1·032	8·6	103	7·21	.....	51568	Nearly meets standard.
Labelled St. Kitts Orange Juice.	1·0434	11·5	340	2·38 + 13·8	.....	57165	Contains 4·8 p.c. sugar and is dyed. Is artificial.